

## Fluorofil™ F45

ePTFE Membrane  
Cartridge Filters



**Fluorofil™ F45 cartridges are manufactured using a highly hydrophobic ePTFE membrane offering exceptionally high gas flow rates at low pressure differentials.**

Fluorofil™ F45 cartridges are recommended for gas filtration and venting applications. The hydrophobic characteristics of the ePTFE membrane makes the Fluorofil™ filter cartridge particularly suitable for wet gas applications, such as fermenter air feed. For solvent and aggressive chemical filtration applications, these cartridges offer a wide range of chemical compatibility with high thermal stability.

### Typical Applications

- Process gases
- Vents
- Fine chemicals
- Photoresists and developers
- Solvents

### Features and Benefits

- Validated with *Serratia marcescens*  $\geq 10^7$  cfu/cm<sup>2</sup>
- Designed for multi-cycle in situ steam
- 100% integrity tested prior to dispatch
- Aggressive chemicals resistant
- Full traceability
- USP class VI approved
- Uses FDA compliant materials
- Non-Fibre releasing

### Ordering Information

Product Code: 1 2 3 4 5 6 7						
1: Membrane		2: Pore rating		3: Version		4: Length (Nominal)
F	Fluorofil™	45	0.45µm	R	Rinsed	1 10" (254mm)
				S	Standard	2 20" (508mm)
						3 30" (762mm)
						4 40" (1016mm)
						5 5" (125mm)
5: End Fitting		6: Seals		7: Additional		
A	Code 3	A	Ethylene Propylene	A	N+U	
B	Code 7	B	Silicone	N	Non-steamable (no insert)	
C	Code 8	C	Viton®	P	Pharma Grade	
F	N SOE	D	Nitrile	U	Unbranded	
G	G DOE (short)	E	FEP Encap. Viton®			
H	G SOE	G	FEP Encap. Silicone			
J	216 (218), fin	J	DOE PTFE			
K	Code 2					
L	223, fin (no lugs)					
M	DOE					
S	Code 28, fin (3 lugs)					
U	224, fin					
V	226, fin					
Y	BS832, flat					

## Specifications

### Materials of Manufacture

Filter membrane:	ePTFE
Membrane support:	Polypropylene
Irrigation mesh (support):	Polypropylene
Drainage layer:	Polypropylene
Inner core:	Polypropylene
Outer support:	Polypropylene
End fittings:	Polypropylene
Sealing:	Fusion bonding

### Cartridge Dimensions (Nominal)

Effective Filtration Area:	Up to 0.69m <sup>2</sup> (7.4ft <sup>2</sup> ) per 10" module	
Diameter:	70mm (2.8")	
Length:	1 module:	127mm (5")
	1 module:	254mm (10")
	2 modules:	508mm (20")
	3 modules:	762mm (30")
	4 modules:	1016mm (40")

### Cartridge Treatment

Standard:	Cleaned and flushed, without further treatment
Rinsed:	Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

### Gaskets and O-Rings

Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

### Maximum Differential Pressure

Normal flow direction at:	
20°C (68°F):	6.0bar (87psi)
80°C (176°F):	4.0bar (58psi)
100°C (212°F):	3.0bar (44psi)
120°C (248°F):	2.0bar (29psi)
125°C (257°F):	1.5bar (22psi)
Reverse flow direction at:	
20°C (68°F):	2.1bar (30psi)
80°C (176°F):	1.0bar (15psi)
100°C (212°F):	0.5bar (7psi)

### Operating Temperature

Maximum continuous:	80°C (176°F)
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### Sterilisation

*In situ* steam 50 x 20 minute cycles at 135°C (275°F).

## Extractables

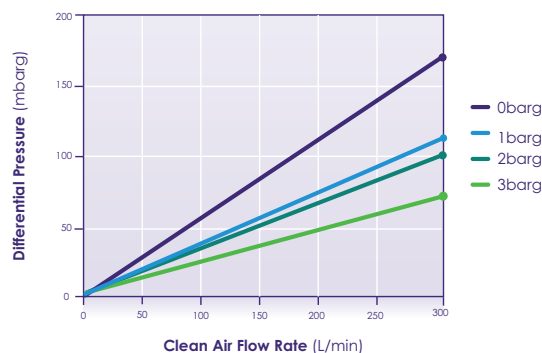
Minimum total extractables. Please refer to the Fluorofil™ F45 Validation Guide.

## Integrity Testing

Each Fluorofil™ F45 module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-20 bacterial challenge tests. Non-destructive integrity tests, such as Diffusive Flow, Water Intrusion, Pressure Hold and Bubble Point, can be performed by customers. Please contact Porvair for procedural details.

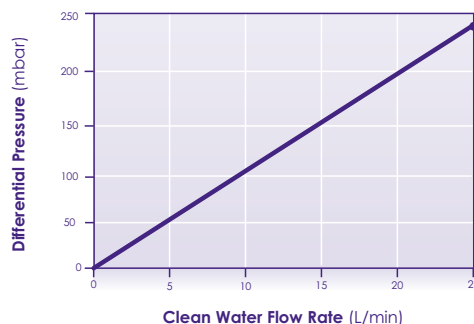
## Gas Flow Rates

- Typical clean air flow rate:  
A 254mm (10") Fluorofil™ F45 0.45µm single cartridge exhibits the flow-ΔP characteristics indicated below.



## Clean Water Flow Rates (after Solvent Pre-wet and Water Flush)

- Typical clean water flow rate:  
A 254mm (10") Fluorofil™ F45 single cartridge with 0.45µm microbial rating exhibits the flow-ΔP characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:  
For solutions with a viscosity other than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.



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